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## MORE CONDITIONS OF A GOOD HORSE

To the Editors of *Mod. Lang. Notes*.

SIRS:—Professor Carleton Brown (*MLN.*, xxvii, 125) pointed out several catalogues of the properties of a good horse similar to two such lists noted in Professor Hulme's edition of the *Harrowing of Hell*. May I call attention to two more analogues, which confirm the impression that these proverbial witticisms had a wide circulation?

In Robert Greene's play, *James the Fourth* (circa 1592), Ateukin, who desires to procure a servant, is conversing with Slipper, who wishes the position:

"*Ateu.* Art thou so good in keeping a horse? I pray thee tell me how many good qualities hath a horse?

"*Slip.* Why, so, sir: a horse hath two properties of a man, that is, a proude heart, and a hardie stomacke; foure properties of a Lyon, a broad brest, a stiffe docket,—hold your nose, master,—a wild countenance, and 4 good legs; nine properties of a Foxe, nine of a Hare, nine of an Asse, and ten of a woman.

"*Ateu.* A woman! why, what properties of a woman hath a Horse?

"*Slip.* O, maister, know you not that? Draw your tables, and write what wise I speake. First, a merry countenance; second, a soft pace; third, a broad forehead; fourth, broad buttockes; fift, hard of warde; sixt, easie to leape vpon; seuenth, good at long iourney; eight, mouing vnder a man; ninth, always busie with the mouth; tenth, euer chewing on the bridle." (Collins, *Plays and Poems of Greene*, Vol. II, p. 102.)

In a note on this passage, suggested, it seems, by Mr. W. J. Craig, Collins cites its undoubted source, a similar passage in "Fitzherbert's *Book of Husbandry*, first printed in 1523," and reprinted by Dr. Skeat for the English Dialect Society. Unfortunately even Skeat's reprint is not available to me for comparison just now, but it seems to be an entirely different work from the *Foure Bookes of Husbandry*, quoted by Professor Brown. Greene has borrowed almost literally, though Fitzherbert lists fifty-four properties to Greene's forty-three.

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## ALGEBRA

To the Editors of *Mod. Lang. Notes*.

SIRS:—The *NED.* makes certain errors of omission and commission in the discussion of the words *algebra* and *almachabel*. The omission is in neglecting to ascribe both of these terms, which are transliterations from an Arabic title, to the first systematic treatise on algebra, *alājebr w'al-muq-balah*, written by Al-Khowarizmi (c. 825 A. D.). Further the *NED.* states incorrectly that *algebra* was taken into Italian in 1202, which is the date of the first draft of the *Liber abaci* by Leonardo Pisano. This work was published as *Scritti di Leonardo Pisano*, Vol. I, *Il liber abbaci*, Rome, 1857, by Prince Boncompagni, but notwithstanding the title the text is in Latin. Nor would it be correct to state that Leonard introduced the word *algebra* into Latin, for Gherard of Cremona (1114–1187) used the term in his translation of Al-Khowarizmi's algebra and in at least two other translations from the Arabic. As a title Leonard always couples *algebra* with *almuchabala* as in the Arabic original but he does use the expression, *Age secundum algebra*. In this latter, however, he but follows Abu Kamil (c. 950 A. D.), the second great Arabic writer in this field, from whom, as I have recently shown (*Bibliotheca mathematica*, Vol. XII, 1912, pp. 40–55), Leonard drew many of his problems. In the absence of any evidence that Leonard knew Arabic we must suppose that he used a Latin translation of Abu Kamil's work. The *NED.* gives *almachabel* as "obs.= algebra." The citation from John Dee couples the two terms as we have mentioned, and it is this phrase which is equivalent to our word 'algebra'; this was the universal custom wherever *al-muqābalah* was used at all. It may be well to state that *al-jebr* refers to the change of negative terms from one side of an equation to positive terms upon the other, while *al-muqābalah* refers to balancing or canceling like terms which occur on both sides of an equation against each other.

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